REMARKS

Applicants respectfully request that the subject application be preliminarily amended as provided in the foregoing amendment prior to calculation of the filing fees. Applicants also respectfully request the Examiner to consider the foregoing amended claims in the first Office Action on the merits.

During prosecution of the parent application, Applicants had noticed that there was a better expression for an expression or term being used in the subject application and thus amended the specification for clarity of expression so the expression "through-rate control element" was revised to read as "slew-rate control element (slue-rate control element)". This amendment was entered into the parent application, and thus for consistency, Applicants are similarly amending the herewith filed divisional application.

Claim 8 was amended for clarity and to use the better expression as described above for the specification.

Claims 4, 7, 13 and 19 were re-written so as to be in independent form including the limitations of the base claim, there being no intervening claims.

Claims 21-28 were added to more distinctly claim embodiments of the present invention.

Included herewith is a marked-up version of the amendments to the subject application by the current amendment. The marked-up versions are found on the pages captioned or entitled "Details of Amendments" that follow the signature page of the within Preliminary Amendment.

It is respectfully submitted that the subject application is in a condition for allowance. Early and favorable action is requested.

Applicants believe that additional fees are not required for consideration of the within Preliminary Amendment. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge Deposit Account No. **04-1105**.

Respectfully submitted,
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DETAILS OF AMENDMENTS

Please preliminarily amend the subject divisional application as follows:

IN THE SPECIFICATION

Page 1, before line 1 insert the following paragraph:

This application is a divisional of co-pending U.S. application serial number 098/275,063, filed March 23, 1999, now allowed, the teachings of which are incorporated herein by reference.

Page 23, rewrite the paragraph starting at line 21 and continuing on the next page, to read as follows.

In the second embodiment, as shown in Figure 3, ~~through-rate~~ slew-rate (slue rate) control elements SC (slope control sections) which are capable of controlling fall rates of output signals (gate-off voltages Vg1) are added to the output stage of the conventional gate driver. With this arrangement, fall slopes of the scanning signals respectively outputted to the scanning signal lines can be controlled, as in the case shown in Figures 1 and 2.

Page 24, rewrite the paragraph starting at line 4, to read as follows.

Each of the ~~through-rate~~ slew-rate control elements SC, which is provided between the selection switch 3b and the input terminal VD2, is equivalently an output impedance control element which controls impedance of each output of the gate driver, which increases output impedance only upon fall of the gate-off voltage outputted to the scanning signal line (the fall of the gate-off voltage is hereinafter

referred to as "scanning signal line fall"), thereby to make the output waveform of the gate driver dull. This causes differences in fall speeds in the display panel, which stem from waveform dullness as transmission characteristics of the scanning signal lines, to cancel each other. In result, it is possible to suppress occurrence of the level shifts ΔV due to influence of the aforementioned parasitic capacitances Cgd, while to make the level shifts throughout display panel equal to each other.

Page 24, rewrite the paragraph starting at line 21 and continuing on next page, to read as follows.

Incidentally, the ~~through-rate~~ slew-rate control element SC is not particularly limited, and it may be anything provided that it is capable of varying the output impedance so as to vary the fall speed. It may be realized by using, for example, a common control technique of adjusting impedance by controlling a gate voltage of a MOS transistor element.

Page 25, rewrite the paragraph starting at line 13, to read as follows.

As to the above-described second embodiment, a case where the ~~through-rate~~ slew-rate control element SC for controlling the fall speed (slope) of the scanning signal is added to the conventional structure of the scanning signal line driving circuit (gate driver) is explained. In this case, however, it is necessary to additionally provide the ~~through-rate~~ slew-rate control element SC in the gate driver, and the conventional common inexpensive gate driver cannot be applied as it is. Therefore it is not economical.

IN THE CLAIMS

Cancel claims 1-3, 6, 9-12, 17-18 and 20 without prejudice.

Amend claims 4, 7-8, 13 and 19 to read as follows:

4. (AMENDED) ~~The display device as set forth in claim 1,~~ A display device, comprising:

a plurality of pixel electrodes;

image signal lines for supplying data signals to said pixel electrodes;

a plurality of scanning signal lines provided so as to intersect said image signal lines;

a driving circuit for outputting a scanning signal to actuate said scanning signal lines;

thin film transistors each having a gate, a source, and a drain which are connected with one scanning signal line, one image signal line, and one image electrode, respectively, said thin film transistors being provided at the intersections of said image signal lines and said scanning signal lines, respectively;

wherein said driving circuit controls falls of the scanning signal; and

wherein said driving circuit controls the slopes of the falls of the scanning signal, based on gate voltage-drain currency characteristics of said thin film transistors.

7. (AMENDED) ~~The display device as set forth in claim 1, wherein:~~ A display device, comprising:

a plurality of pixel electrodes;

image signal lines for supplying data signals to said pixel electrodes;

a plurality of scanning signal lines provided so as to intersect said image signal lines;

a driving circuit for outputting a scanning signal to actuate said scanning signal lines;

thin film transistors each having a gate, a source, and a drain which are connected with one scanning signal line, one image signal line, and one image electrode, respectively, said thin film transistors being provided at the intersections of said image signal lines and said scanning signal lines, respectively;

wherein said driving circuit controls falls of the scanning signal;

wherein the scanning signal is composed of a gate-on voltage which causes said thin film transistor to attain an ON state and a gate-off voltage which causes said thin film transistor to attain an OFF state; and

wherein said driving circuit includes:

a shift register section composed of a plurality of flip-flops which are cascaded and to which a scanning timing control signal is supplied;

slope control sections for controlling the slopes of the falls from the gate-on voltage to the gate-off voltage; and

switch sections each of which switches the gate-on voltage for the gate-off voltage or vice versa according to an output of each flip-flop.

8. (AMENDED) The display device as set forth in claim 7, wherein each slope control section includes a ~~through~~slew-rate control element.

13. (AMENDED) ~~The display device as set forth in claim 1, wherein:~~ A display device, comprising:

a plurality of pixel electrodes;

image signal lines for supplying data signals to said pixel electrodes;

a plurality of scanning signal lines provided so as to intersect said image signal lines;

a driving circuit for outputting a scanning signal to actuate said scanning signal lines;

thin film transistors each having a gate, a source, and a drain which are connected with one scanning signal line, one image signal line, and one image electrode, respectively, said thin film transistors being provided at the intersections of said image signal lines and said scanning signal lines, respectively;

wherein said driving circuit controls falls of the scanning signal;

wherein the scanning signal is composed of a gate-on voltage which causes said thin film transistor to attain an ON state and a gate-off voltage which causes said thin film transistor to attain an OFF state; and

wherein said driving circuit includes:

a control section which outputs a charge control signal and a discharge control signal, which both synchronize with each scanning period;

a slope voltage control section which charges up in response to the charge

control signal and outputs a slope control voltage, while makes the slope control voltage zero by discharging in response to the discharge control signal; and

a subtracting section which outputs a voltage resulting on subtraction of the slope control voltage from the gate-on voltage during the charging, while outputs the gate-on voltage during the discharge.

19. (AMENDED) ~~The display method as set forth in claim 17,~~ A display method of carrying out display by supplying data signals to a plurality of pixel electrodes through image signal lines and actuating the pixel electrodes by supplying a scanning signal thereto through scanning signal lines which intersect the image signal lines, wherein during the actuation, slopes of the falls of the scanning signal are controlled on the basis of gate voltage-drain currency characteristics of a plurality of thin film transistors provided at the intersections of the image signal lines and the scanning signal lines.

Add new claims 21-28 that read as follows:

21. (ADDED) A display device, comprising:

a plurality of pixel electrodes;

image signal lines for supplying data signals to said pixel electrodes;

a plurality of scanning signal lines provided so as to intersect said image signal lines;

a driving circuit for outputting a scanning signal to actuate said scanning signal lines;

thin film transistors each having a gate, a source, and a drain which are connected to one scanning signal line, one image signal line, and one pixel electrode, respectively, said thin film transistors being provided at the intersections of said image signal lines and said scanning signal lines, respectively; and

wherein said driving circuit is adapted so as to control a waveform of the scanning signal so that the scanning signal falls at a predetermined slope.

22. (ADDED) The display device as set forth in claim 21, wherein the scanning signal falls forming the slope in the waveform all the way from a HIGH to a LOW.

23. (ADDED) The display device as set forth in claim 21, wherein the scanning signal falls forming the slope in the waveform part of the way from a HIGH to a LOW.

24. (ADDED) The display device as set forth in claim 23, wherein the slope appears in the waveform in an area where said thin film transistors are on.

25. (ADDED) A display method of carrying out display by supplying data signals to a plurality of pixel electrodes through image signal lines and actuating the pixel electrodes by supplying a scanning signal thereto through scanning signal lines which intersect the image signal lines,

wherein during the actuation, control is carried out so that the scanning signal has a waveform falling at a predetermined slope.

26. (ADDED) The display method as set forth in claim 25, wherein during the actuation, control is carried out so that the scanning signal falls forming the slope in the waveform all the way from a HIGH to a LOW.

27. (ADDED) The display method as set forth in claim 25, wherein during the actuation, control is carried out so that the scanning signal falls forming the slope in the waveform all the way from a HIGH to a LOW.

28. (ADDED) The display method as set forth in claim 27, wherein during the actuation, control is carried out so that the slope appears in the waveform in an area where a plurality of thin film transistors provided at respective intersections of the image signal lines and the scanning signal lines are on.